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ABSTRACT

This paper presents an historical perspective on the development of educational delivery systems, and then turns to the challenges of the information age and the issues of developing new delivery systems in this challenging environment. The paper discusses the fragility of power sources and of the networked world; technological weaknesses; freedom and control of information; a culture of changing values; increased incivility and hostility; and the Internet and the elements of divisiveness that will affect new educational delivery systems. Discussion then moves to issues related to educational technology and distance learning, including cost, control and ownership of course content; resistance to change; populations reached; student stress; the virtual university; problems and challenges; accreditation; the future of information networking; continuing threats to social stability; quality of distance education programs; and computer reliability and ease of accessing online information. Contains 35 references. (AEF)

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New Delivery Systems for the 21st Century

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Historical Perspective

From the early days of the Republic, local, state, regional and federal government officials sought to expand educational access and opportunity to serve ever more of the nation's citizens. Each of their proposals had advocates and detractors but eventually innovative, experimental educational delivery systems became part of the mainstream of teaching and learning.

The Puritans founded Harvard College in 1636 as one of their first efforts after providing for churches and local government. During the Puritan era Dame Schools were created for pre-school youngsters. Although honored more in the breach than the observance, colonial laws, referred to as the 'Old Deluder Satan Acts' of 1642 and 1647, required communities of 50 families to provide a common school and those with 100 families to provide a Latin Grammar School or a tutor for boys of talent. Later Ben Franklin (1749) proposed expanded educational opportunities with the Academy, which was oriented toward practical subjects for the workforce.

In 1785 Congress passed the Northwest Ordinance that set aside land for schools in the territory west of the Alleghenies, north of the Ohio Rive, and East of the Mississippi River. The Ordinance called for each town to set aside one square mile of each township to support schools. Two years later another Ordinance provided that two full townships in each state was to be

set aside for a university. The ordinance contained a statement that schools and education should forever be encouraged for the benefit of human happiness and good government.

The classics of the Latin Grammar School were represented by powerful advocates from the clergy and traditionalists. *The Yale Report* of 1828 and the *Harvard Report on General Education*, 1945 emphasized the classics and theology for mental discipline. The writers of the report were convinced that traditional classical studies were vital for all trades and vocations. Thus, efforts to open the doors of learning to a wider expanse of the population were hampered but over time continued to gain more appeal especially after the civil war (Pulliam and Van Patten, 1999.)

Congress passed the Morrill Act of 1862 after several failed tries. The Morrill Act provided for *Land Grant Colleges,* which expanded educational opportunities for the trades—agricultural, mechanical, military science and tactics, and later home economics and teacher education.

Good (1970) identified early efforts in developing new educational delivery systems. In the late 1600s and 1700s there were colonial evening schools for adults. In the nineteenth century skilled workman formed mechanics institutes. The American Lyceum and the Chautauqua adult education programs were developed to help citizens update and upgrade their knowledge and skills. In the 1890s, university extension courses were developed. Summer school courses and public evening schools were prevalent in the larger cities. These programs met needs of adults and English-as-a-second language students (553-556.) Good (1970) wrote about home study or correspondence departments in major universities in the late 1800s. Extension courses were designed to reach placebound students and those without means to attend a college. Teachers and workers institutes,

summer school sessions, and university extension courses and programs were increasingly common at the turn of the century. From the 1890s-1910s these new delivery systems helped workers keep up to date in their fields, although then as now critics found low standards, inadequate library facilities, and lack of relevance in course content (Butts and Cremin 1953.)

Our educational history provides a record of expansion of social consciousness as ever more of our population is provided with access and opportunity to gain knowledge and skills. Our nation has a record of reaching ever more of its population. From Colonial Schools with their emphasis on moral and ethical conduct, religious training, and traditionalism; through an expansion of educational opportunities with the growth of the common school (elementary education); the growth of secondary education with the Kalamazoo Act of 1874 upholding public taxation for high schools; the creation of junior college at the turn of the century and the community college expansion with the Truman Report of 1947; to affirmative action and continued growth of new educational delivery systems educational access has expanded. Each of the efforts to develop new educational delivery systems had numerous critics. An example of such criticism was the outcry by College and University administrators over the G.I. Bill (Serviceman's Readjustment Act) of 1944. When the legislation was under consideration many university presidents declared it would water down educational quality and standards. Critics complained it would bring in a hoard of unqualified and unprepared students from all ranks and geographic areas. A Syracuse University Research Institute disproved the critics' concerns by identifying returning veterans as more serious about their studies, better students, and more productive citizens in their jobs and communities. The Institute report included the

observation that a far larger percentage of the population could benefit from higher education than previously had been thought possible (Van Patten, 1997.)

Young (2000) is a persistent critic of distance learning and its connection to a philosophy of consumerism. Young sees distance education as a corporatization of American higher education that threatens the rights of faculty members to their own academic contributions. Young raises issues of who sponsors distance learning as well as what are their interests, who they represent and what they are trying to do. He concludes by noting that huge university expenditures for technology are "a technological tapeworm in the guts of higher education." Young's concerns are important contributions to helping educators to concentrate on the uses rather than the instruments of technology. Too often technology becomes an end in itself rather than as a tool to enhance learning opportunities for a large population with limited access to traditional educational institutions. Distance learning with all its challenges, as is true of each of the innovative, experimental historical advances noted, will develop and be accepted as part of the educational structure in the future.

Challenges of an Information Age. When I was checking out a book at our local library, the electric power blacked out. I noticed youngsters sitting nervously in front of the computers uncertain and seemingly at a loss of what to do with their information retrieval system out of order. The power went out another time when I was in the checkout line of one of the nation's largest retailers. Checkout lines backed up, customers got restless and were overheard to say that they would never shop in that market again. The manager gave customers store items to show he was sorry and apologetic for

the power glitch. Our technological age depends on reliable sources of energy to fuel computer retrieval and communication networks. Shut downs and brown outs threaten the viability of an economic, financial and social structure based on technological speed and access. In a society committed to networking, the workforce is often unable to cope with glitches in the power grid. Even if employees could use pencil and paper to figure out how much customers owed (which is doubtful with the emphasis on calculators, computers large and small) major corporations would not be able to accept such manual work. Corporations depend on rapid input of items sold which is relayed electronically to financial affairs officers as well as to warehouse replenishment departments. Dependability and reliability of technological systems is a vital life link for corporations, large and small. People get nervous when their networking systems are down, inoperable, undependable. Anger often leads to anger and dysfunctional behavior in a wired society.

Prophecy: Nostradamus and other prophets warned of possible environmental disasters from earthquakes, floods, or comets that could drive a global society back to the stone ages (Paulus, 1997.) Civilization is threatened by overpopulation, dependence on non- renewable energy resources, short sightedness in developing renewal energy resources, prejudice and intolerance leading to wars, food shortages, terrorism, arms race, spread of nuclear weapons, the Greenhouse effect, moral decay, deficit spending, growing incivility, excessive litigation, excessive nationalism, protectionism, and isolationism (367-268.) The future benefits of technology depend on the political, economic, social, educational, institutional and religious stability of civilization as well as on the unpredictability of natural forces yesterday, today and tomorrow. Few individuals are aware of or much concern about the fragility of our

networked and wired world. Cyber-terrorism requires our best technological resources to prevent global economic and political shut-downs.

Backup Systems and Monopolies. Most corporations, hospitals, elevators in high rises, and businesses have back- up power systems installed for all eventualities. Our power sources are fragile. Government efforts to deregulate utilities ostensibly to break up monopolies and give customers more choice, often lead to unintended consequences. Government break up of monopolies has less to do with increasing public choice than to responding to a growing powerful chorus of competitors. Brown outs are more frequent as growing numbers of entrepreneurs enter the energy resource and utility business. Competitors, whose protests of monopoly often reflect callous greed as underfinanced, untrained, unprepared entrepreneurs seek to buy experts on borrowed money to design, create and implement an energy company. Break up of benign monopolies like ATT Bell telephone have provided more choice but increased costs, decreased reliability, and have led to slamming as greed has brought about large scale fraudulent activity. These are just a few of the events that illustrate the fragility of the superinformation highway in an age of cyber speed and increased competition in the market place.

Technological Weaknesses. Computer glitches, crashes, virus creators and infiltrators, can wipe out hard drive data, even back-up systems in a matter of seconds. Legal authority for utilizing confidential computer information as in the Lewinsky-Clinton affair or in employers searching employee data files threaten user privacy. Schorr (2000) finds a paranoid streak in our culture that is often supported by politicians in their never ending witch hunts. The computer age, Schorr notes, has created mind-boggling problems in protecting information. Scientists, CIA,and FBI experts have worked for

years to guard against an attack on the computer system that will manage future wars. Scientists have to be reminded not to download classified information to unclassified computers (Schorr, 2000.) Politicians in their witch-hunt expertise seek to punish scientists for leaking information; often unaware that this scientific information is widely available on web sites.

Freedom and Control. The challenge of top-secret scientific research and the propensity of scientists to operate more effectively without excessive control continue to plague officials. Congresspersons are always quick to investigate, primarily to embarrass the other party. Their investigations generally lead to more not less dissemination of secret, classified information. Thus, the challenge of politicians in search of sinister mythological boogiemen, and the need for protecting classified information. The rapidity of Internet growth makes it difficult to monitor. Ford (2000) reported on a team of American Internet entrepreneurs who are setting up the world's first 'data haven,' a virtual rules-free location for people and companies to store and transmit electronic files free of government legislation. This is taking place seven miles off the coast of Britain on a World War 11 era antiaircraft gun emplacement. Scientists need freedom to experiment yet control to protect a nation's natural security. That is at least, until we have a peaceful global community, which lies in the far distant future if ever.

Changing Values. Voyeurism, surveillance on the job, marketers on the Net, and database wielding bureaucrats often reflect excesses in entrepreneurism, while MTV, VTV, survivors and anonymous Internet news fabricators and leakers reflect an ever changing values culture. Government officials leaking information to sway public opinion express continuing one-upmanship. Politics of "gotscha" predominate as efforts to find every e-mail

sent out by the white house continue. Thus gridlock in government threatens both civility and necessary democratic consensus.

Reality- based TV as witness 'Survivor", or war pictures showing planes firing missiles that blow up targets while individuals are killed in "collateral damage" creates in viewers a sense of unconnectedness with real life. Viewers become immune to terrorism, death, and become enraptured with TV scenes such as survivors capturing, killing and eating rats for food to attract audiences for 15 minutes (Chinni, 2000.) These scenes connect to the history of the Gladiators of Roman days or the Spanish Inquisition where people who challenged authority or had independent ideas were placed on the rack and tortured to death.

Civility. Perhaps the following observations about our culture are unjustified, excessive, unbalanced and polemic. However, a few yeas ago a *Penn Commission on Society, Culture and Community* comprising some 49 prominent intellectuals, journalists, historians and sociologists was formed. It met twice a year to analyze a rising tide of meanness and civility. That tide it was felt encouraged violence, blocked social reform, and disrupted reasoned debate. Intolerance, provincialism, isolation and anti-government hate groups all were seen as threatening national unity (Van Patten, 1997.) Over 100 members of Congress have been spending a week on retreats since March 7-9, 1997 to search for civility and decency (Van Patten, 1997: vi.)

Incivility and increased costs of running for election, have led in the last few years to the largest number of Congressmen of both parties, leaving government service. In your face journalism, media sensationalism, one-minute news broadcasts have all made a detrimental mark on civility and comity essential not only for a democracy but for civilization as well. Congresspersons of both parties are forced to raise huge sums of money to

run for election. Madison Avenue advertisers are hired together with investigators to find negative information on opponents in a never-ending game of one-upmanship.

Currently our nation and world are facing individual and collective hostility. This may be seen in increasing litigation, violence, aggression, intolerance, prejudice, breakup of families, terrorism, and one sided thinking in a many sided world.

Peterson (2000) notes that cellphones, pagers, and high tech devices can interrupt us anywhere, anytime, leading to a perpetual sense of urgency, emergency, and overload. Anger, rage, and hostility pervade all income, age, race, gender, ethnic and culturally diverse groups as well as single individuals and families. Technology is not the only culprit in this age of rage but a variety of other factors cause hostility including uncertain job opportunities and insecure employment due to corporate lay offs in a highly competitive, consumer oriented market place.

The Internet. Colleges and Universities are going hi-tech with attractive web sites to hawk their wares in an increasingly competitive marketplace. Blair (2000) reported on a survey of 500 students chosen at random, 90% of whom have access to the Internet at home or school, and spend an average of more than seven hours surfing the web. Most colleges and universities now offer panoramic videos of their campus facilities, and classrooms. Interactive videos with matriculating students telling perspective applicants about their campuses from a youth perspective are also provided by colleges and universities as a recruiting tool. Online admissions and videoconferencing with prospective students is a growing trend.

What does this have to do with distance learning? Distance learning takes place within a culture. The quality of the culture determines the

effectiveness and content of its educational systems. The elements of divisiveness we have explored will all affect new educational delivery systems in our new century. Accuracy and accountability for Internet news reporters operating through their web cites are altering how news is disseminated. Verification of information is often problematic but the Internet offers more information ever more quickly for citizens (Baldauf, 1999.)

Issues. The age of technology has made great strides but it is still in its infancy as new innovations, modifications, and quantum leaps are emerging daily. For the first time since 1996 more families with children have Internet connections than subscribe to newspapers. On average, children watch TV for nearly two and a half hours each day, and interact with all forms of media for six and a half hours a day (Reuters, 2000.) The challenges of our new electronic era for education have only touched the surface. Major traditional universities are rushing, however, to offer new delivery systems to hold on to their customers and gain more through offering information to meet the needs of placebound consumers. The rush to distance learning has led to promotions, including cost reduction as universities rush to attract consumers in competition with Kaplan Educational Centers, Phoenix University and other emerging for-profit educational corporations.

Blumenstyk (2000) notes that with colleges racing to offer distance education, such companies as Blackboard, Convene, Embanet, and Real Education are moving vigorously to get more visibility for their products. Carr (2000) reports that Barnes and Noble is creating an online 'university' for its customers in an attempt to attract and retain customers by offering free education.

Administrators and faculty are dealing with issues of cost and control over course content. They are analyzing how soon they need to begin offering on-line options to students, and how broad those options should be.

Young (2000) analyzed the continuing debate over the ownership of on-line courses. Young noted that at Drexel University, administrators believe the university should own all the rights to on-line course materials, but share profits with professors who wrote them. Many professors refuse to teach distance education courses if they have to give up rights to their own course materials. The American Federation of Teachers recently passed a resolution opposing undergraduate degrees on line and called for full faculty control of courses offered on the web.

Throughout the country alternative educational delivery systems are increasing. These delivery systems empower people through letting them determine the time and place for their education as well as having a wider choice of degree programs. Distance learning will enable people who have never had a chance before to gain access to knowledge. The World Wide Web can enable people to reach endless knowledge sources with a minimum of expense. Education in the 21st century increasingly will be in the virtual realm multiplying the number of choices individuals have for accessing knowledge, resource access and retrieval systems as well as increasing the options for pacing themselves. Ellis (2000) explored ways to serve students more effectively through electronic student services. In addition she sought to infuse multicultural traditions and global thinking into the field of student services. Distance learning and technology will serve to enhance the opportunities for under represented students to obtain degrees and workforce licensing.

Sack (1999) reported on the role of distance learning in fulfilling the needs for certified special education teachers in rural Virginia. The Virginia State Department of Education provided a $1.2 million grant to Old Dominion University to provide distance- learning classes for teachers and other professionals for special education certification. Classes were broadcast to community colleges where students could receive classes through two-way video systems. Experienced teachers were provided as mentors to assure quality interaction. Carnevale (1999) finds some futurists believe distance education can be used to improve teaching, increase enrollment and revenue. Chris Dede believes that within his lifetime faculty refusal to use distance learning technology will be considered professional malpractice (Carnevale, 1999.) This author has witnessed distinguished faculty members not only refusing to teach distance learning classes but seeking an administrative ruling that no faculty member can be required to teach distance education classes. This suggests resistance to change in a time of unprecedented new educational delivery systems. Traditional university administrators will find it helpful to reward those faculty whoparticipate in distance learning programs through load reduction, increased salaries and opportunities for additional travel funds.

Populations Reached. Distance learning, although useful for the general population, is especially helpful for five populations. Physically challenged, placebound employees and employers, prisoners, English-as-a second language populations, and placebound senior citizens, will be able to update and upgrade employable skills, engage in lifelong learning, and have access to degree programs. Many senior citizens would like the availability of degree programs in their own homes and communities. Travel, relocation, and housing costs for classes at traditional institutions are often prohibitive.

Individuals who have always had the dream of attending and graduating from law schools and institutions of higher education, will be able to fulfill those dreams through distance education programs. Some companies, like Tyson, provide opportunities for employees to get a G.E.D. diploma while working for the company. Many companies, including Tyson, provide computer training for employees. Such training is increasing among the growing prison population of 1.2 to 2 million. Use of prison labor has been growing during a booming economy. Advocates of such labor find it a good way to provide job training for undereducated, under- trained populations. Detractors suggest that use of prison labor hurts private industry and labor unions by providing a low cost labor pool and thus unfair competition (Wood, 2000.)

Distance learning can take place anytime, anywhere, anyplace unhindered by national boundaries, by traditional 8-5 work hours, and by bureaucracies built up over the years in traditional institutions. Distance learning still in its infancy, has been an impetus for traditional universities to offer weekend and evening classes as well as alternative degree programs. Drucker (2000) finds future growth in education and training will not be in traditional schools which currently take about 10% of the GNP (K-12s, 6%; colleges and universities, 4%.) The growth will be in adult education as individuals seek to keep up with the knowledge explosion. Breaking boundaries of time and space is particularly helpful for these populations.

An increasing number of the population will be engaged in data retrieval information and technological fields (Drucker.) Schley (1998) in his review of Creighton and Adams *CyberMeeting* notes that cyberspace helps makes cultures less hierarchical and more diverse, encouraging new

and innovative ways of working together, building consensus and making decisions.

Although there is little available research to determine if student stress would be reduced through distance learning, a case could be made for such a tendency. Partheymuller (2000) reported on a 1999 survey of over 250,000 students from 462 colleges in the United States. It was found that twice as many women feel stress as men with a record number of students (30.2%) reporting feeling stress, many working full time while going to school. Many faculty members report feeling students are more immature today than in the past. Major problems creating stress according to Partheymuller include: (1) the transition from being a child living at home to being an adult with responsibilities for learning. Many undergraduates party excessively and need help in learning how to study effectively (2) Relationships with boyfriends, girlfriends, partners, roommates, or friends (3) Problems with classes and professors. Counselors encourage students to talk with faculty when they have learning problems. (4) Drugs and alcohol create and compound stress-related problems for students. With a pressured culture, greater emphasis on assessment, greater demands on faculty research including grants and publications, such an environment influences students negatively. Distance learning which can take place in students' homes, on job sites, in places where they feel comfortable, perhaps may lessen many of the stress factors.

However, completing courses and degrees through distance learning requires the ability to work without close interaction with teachers and friends. For some students distance learning would be stressful particularly if they cannot cope with independent learning. Carr (2000) reported on a limited survey, which found that students enrolled in *Introductory*

Psychology performed better in distance education courses but were less happy with them. The professors in distance learning courses found they could devote more time to responding to students on a personal level since they didn't have to prepare lectures. Carr continued by noting that the limited survey evidence indicated good students do well in traditional and online formats, the weaker students have difficulties in both formats, and the average students benefit the most from on line courses.

Trends. Distance learning is a work in progress. The concept is still relatively new and participants and designers are often working through collaborative arrangements. Carnevale (2000) discussed two such models. The Western Governors University and the Southern Regional Education Board's Electronic Campus. The Western Governors University is a virtual university with an enrollment of 200 students. The virtual university offers 950 courses and five degree programs from 40 colleges and universities in 22 states. The virtual university provides assessment tests, and awards degrees. The Southern Regional Education Board provides a directory of online courses and degrees offered in the 16 members S.R.E.B. states. The Southern Regional Board lists 3,200 courses and 102 degree programs through 262 institutions. Students earn degrees from individual institutions. Carnevale notes that efforts toward online collaboration are rapidly increasing.

Problems. Problems faced by the two delivery systems include determining tuition rates, prices for online courses, and transfer of credits among member institutions, learning resources and dealing with the competitive nature of universities. The S.R.E.B. electronic campus formed a partnership with the *University of Georgia System* to provide a package of services for students including online admissions applications, financial aid forms, textbook sales,

and career development and placement. In all distance-learning efforts, great attention is paid to assure quality of content, assessment, and instruction. In a competitive student-recruiting environment Liberal Arts Colleges are moving toward online collaboration. Young (2000) describes five years of collaborative work among scholars from 13 institutions of the Associated Colleges of the South to create a virtual classroom. Young further notes that efforts are being made to establish digital libraries, regional technical support centers, and a peer-review system for online teaching materials. Grant money from foundations including Andrew W. Mellon Foundation may be available for collaborative liberal arts partnerships in technology. With the rapid pace of educational change and technological innovation, educational leaders fear funds and enrollment for private colleges may be threatened. Private colleges are essential to provide for increased choice, diversity and innovation.

Accreditation. Accreditation has been found to be essential in recruiting and retaining students in distance learning programs. Accreditation organizations are learning to address the emerging field of distance learning. Arun Netravali, (2000) Lucent Technologies President, envisions a mega-network of networks that will enfold the earth in a communications skin with ubiquitous connectivity and enormous bandwidth. The skin will include countless sensors and other communicating devoices that will provide us with the information on virtually every single thing that impacts our lives—devices such as thermostats, pressure gauges, pollution detectors, cameras and alarm systems.

Predictions. Netravali predicted that the future of information networking, including the growth of a new Age of Virtuality would transform the way people live and conduct their business. With virtual enterprises, travel,

business conferences, offices, universities, and a host of other virtual experiences, distance will become irrelevant. Individuals and businesses will have a variety of individualized, custom services, written by countless programmers on an open mega-network. In the future, Netravali believes, services not bandwidth, will become the key factor in charging customers. Bandwidth will be too cheap to meter. Colberg (2000) reports on vo-tech's online classes in Oklahoma, a first in the nation. While most of the courses would be developed in house, vendors would develop some online classes. Online courses would be developed in response to industry and customer needs.

Weigel (2000) reported on the possibility of online education eventually being free. He noted that Michael J. Saylor, the chief executive officer of software company MicroStrategy, was giving $100 million to develop an online university that would offer online Ivy League, top quality education free. Weigel noted that with a synchronous virtual classroom, the professor could deliver live, interactive lectures to students. In such a scenario isolationism and loneliness would not be a problem for students. Their online web classes could be held anytime, anywhere. He finds that within the next five years students will be able to secure broadband access to the Web in their homes, through a cable modem or a digital subscriber line. The possibilities for reaching a population that has never had the opportunity to access education is tremendous and will change the future of education delivery systems, with the caveats noted above (power reliability and dependability), forever. Weigel also mentions the role of multitasking or doing several things at once while engaged in distance learning.

Continuing Threats to Social Stability. Future scenarios that pose a threat to the U.S. economy include excessive reliance on foreign oil imports.

Some 60% of all oil used in the U.S. comes from countries subject to economic and social instability-Iraq, Iran, Saudi Arabia, Venezuela, Nigeria, and Mexico. The cost of protecting these oil sources is high as witness the Gulf War. Although improved technology can pinpoint additional domestic oil sources, costs of retrieving them will be high (Ray, 2000.) Distance learning alternatives whether for corporate training or higher education degrees can reduce costs of travel to learning centers. Corporate America is already relying on alternative delivery systems as witness in house use of compressed video. Expansion of such systems can aid in lowering the demand for nonrenewable energy sources.

Caveats. Snider (2000) notes that the Web is expected to double in size, perhaps to four billion pages by early 2001. The Web is growing by about 7.3 million pages a day; some 84% of the pages are based in the United States. Snider continued, noting that the percentage of information on the Web that is useful to individuals is approximately 0.01%. The challenge of technocrats is to keep the Web relevant.

Monitoring the Internet to help students maximize productive use of its positive potential will be more essential in the future. Pornography, hate groups, misinformation, and viruses threaten the potential of the Internet. Minerd (2000) reviewed Caldwell's *A Short History of Rudeness.* Caldwell finds hope of civility in people reacting to lawlessness in cyberspace. He wrote that a law of the conservation of civility, holding than any new social space—even one conceived in complete freedom and potential anarchy—sooner or later, thanks to a stubborn human urge, generates leaders, laws and civilizing conventions. Morris Dees (2000) chief trial counsel for the Southern Poverty Law Center in Alabama said there are 500 sites for "hate groups" on the Internet. "There is no free-speech issue in shouting a racial

epitaph at somebody and then shooting or stabbing them, and burning a cross in front of their house."

Virus threats continue to be a problem for computer users. Hill (2000) refers to 'disruptive technologies' which are a threat because established providers (universities) are often not equipped to handle them. He suggests careful planning and including all populations effected by the new education delivery methods.

Another challenge for distance learning is the tendency for instructors to have students work in groups—engage in group projects on which they are graded. Reports from online students suggest that some work very diligently carrying the load while others either don't contribute or procrastinate. If grades are given on group work, the undeserving often receive high grades, since good students don't want to have bad grades even if they have to do the work of nonproductive students. There are a variety of forms of distance learning from compressed video, to e-mail, to web based courses. Personal experience with television distance learning suggests it is helpful to have site based coordinators to monitor reception and handle classes when service providers can not get connections to the various cites. Reliability and dependability in television courses are increasing all the time as telephone companies become more familiar with the necessity of connecting all sites in a timely manner.

The Future. A *National Education Association* survey indicates that college faculty members are enthusiastic about the benefits of teaching distance education courses, although concerned about increased preparation, excessive enrollment and workload time. Faculty members surveyed reported as many students under as over 25 enrolling in distance learning courses and programs, suggesting it is a myth to see distance learning just

for older and part time students (Carr, 2000.) Our future based on our historical past suggests continued change perhaps at a more rapid rate as technology and knowledge power increase connectedness among peoples, nations, cultures, education, economies and transportation. The new information highway is eclipsing the past at a speed that is causing a cultural lag as individuals find it difficult to keep up with the change processes.

Our lives will be enriched to the degree that we understand that the new tools of accessing information are under our control and not deities in themselves. We are in the stone age of technology with vast futures to yet unfold. Our challenge will be to maintain civility, comity, respect, and tolerance for opinions, cultures, and ethnicity across border and boundaries. There will be no room for isolationism or nationalism in an increasingly interdependent and connected world. Distance learning can be the bridge to a variety of initiatives and strategies for improving the lives of individuals throughout the world.

Quality. Quality of distance education programs will be a focus of government efforts to persuade new for-profit universities to maintain high standards for their World Wide Web courses according to Carnevale (2000.) Senator Bob Kerry is chairman of a Congressional Commission made up of senators, congressmen, educators and business people. Their mission is to provide recommendations by November 2000 on what the government should or should not do on Web-Based Education. Early reports indicate commission members do not want government regulation but rather individual institutions quality monitoring programs. Alan Arkatov, a member of the commission, wants to encourage the entrepreneurial spirit of for-profit online schools and not over control the movement with excessive regulatory zeal.

Reliability. Computer reliability and ease of accessing information from the Internet will be the new frontiers of knowledge. Drucker (2000) notes that in an upwardly mobile, fast-changing world, education is becoming a life-long activity for ambitious people. Webucation, he finds, will become a rich consumer market. With its interactivity and multimedia capabilities, the Web is by far the most efficient means of delivery of this valuable but intangible product. Education-to-business and education-to-consumers is tomorrow's story.

Futurists building alternative scenarios require the understanding that our tomorrows are in a perpetual process of unfolding, emerging, developing, being created and shaped by multidimensional forces each of which connects with the other. Past generations pass the torch to future generations. The torch is the gift of knowledge and the preciousness of the spirit of transcending limits to form new paradigms in time and space. Distance learning is an example of a quantum leap in educational delivery systems. Refinement in reliability, networking, and interactivity will continue to improve the systems. As traditional delivery systems, our colleges and universities, are now and will in the future encompass distance learning as they protect their enrollment base and growth potential in a survival mode.

Lloyd (2000) quotes T.S. Eliot to remind us to be cautious of being inundated with an excess of information in our new century.

Where is the life we have lost in living?
Where is the wisdom we have
lost in Knowledge?
Where is the knowledge we have
lost in information?
T.S. Eliot

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